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PROGRAMS OF FOREIGN GOVERNMENTS FOR FIBER-FLAX PRODUCTION

by

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PROGRAMS OF FOREIGN GOVERNMENTS FOR FIBER-FLAX PRODUCTION

INTRODUCTION

Flax is grown in a great many countries of the world and is found on every continent. In the world as a whole, approximately 5 million acres of flax are planted each year, from which a production of nearly 2 billion pounds of fiber is obtained. The areas of greatest production are in eastern Europe, but northwestern Europe is also important as an exporting region.

It is natural that any crop so universally cultivated could be produced more economically in some countries than in others and that quality would vary with the different regions of growth and methods of production. In periods of war when normal trade is disrupted among nations, many countries which were not especially interested in flax-fiber production for economic reasons became extremely interested for strategic reasons of supply. Consequently, flax cultivation in many countries has had a tendency to decrease during periods of general peace and to expand during periods of major wars. (The Soviet Union is an exception.) Adequate increases often can be obtained only with much encouragement and aid from the central government concerned.

This report is written to present available information concerning such government programs for flax production in foreign countries. Because greatly increased production occurred during World War II,by Allied powers to substitute for European flax and by Axis powers to substitute for cotton, most of the material presented relates to the war period.

Data are incomplete for many countries and none are at hand for others, but those which are readily available are presented in the belief that they will be useful. Information is based largely upon reports from Foreign Service officers. Prices and other currency amounts are converted to equivalent values in United States dollars and cents on the basis of the average official rate of exchange for the year concerned.

COUNTRIES OF THE BRITISH EMPIRE

Production of fiber flax in the British Empire is usually relatively small. Northern Ireland averaged little more than 23,000 acres annually during the last 15 years before World War II, but this represented almost two-thirds of the flax acreage in the entire British Empire. A total of about 45,000 acres of fiber flax per year was grown in the Empire during 1925-29, but an acreage of only about 24,000 acres per year was grown during the next 5-year period. Interest in domestic production increased as war threatened, and acreage was increased again. An average of approximately 44,000 acres was cultivated during the 5 years ending with 1939.

The mills of the United Kingdom (Great Britain and Northern Ireland) normally depend upon imports from foreign countries for the greater part of their peacetime supplies of flax fiber. Approximately 64 million pounds were imported annually from 1929 through 1933. About 77 percent of the imported fiber originated in Belgium and Latvia. Less than 1.5 percent originated in other British countries.

The Axis occupation of the low countries and Norway cut off from the United Kingdom the most important source of flax-fiber supplies, and at the same time demand for it sharply increased. Textile goods of flax fiber were urgently needed for both military and wartime civilian uses.

The British Government organized a program for increased production of flax fiber and encouraged all parts of the Empire to participate in putting it into operation. As a result of the program, the average area cultivated for flax fiber was nearly quadrupled in Northern Ireland; it was increased substantially in Australia, Great Britain, Canada, and Eire; and plantings were made in British East Africa, New Zealand, India, and other countries. The total area within the Empire thus reached approximately 263,000 acres each year during the period 1940-44. The average Empire area had increased to nearly 11 times that of 1930-34, while the world acreage (exclusive of areas planted for seed only) had decreased nearly 18 percent from an estimated average of about 6.4 million acres to less than 5.3 million acres. (See table 1.)

Table 1. - BRITISH EMPIRE: Flax-fiber acreage and estimates of world totals, by 5-year averages, 1925-44

Countries	1925-29	1930-34	1935-39	1940-44 a/
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
United Kingdom:				
Northern Ireland	33	14	23	85
Great Britain	2	1	6	43
Eire	8	2	4	20
Canada	6	5	8	37
Australia	-	-	b/ 1	50
New Zealand	-	-	-	11
British East Africa (Kenya)	-	-	-	13
India	-	-	-	b/ 1
Other British countries	2	2	2	b/ 3
Total British Empire	51	24	44	263
World estimate c/	4,443	6,404	6,397	5,260

a/ Preliminary estimates, subject to change.
b/ Average of less than 5 years.
c/ Excludes area cultivated for seed only.
Compiled from official sources where available; otherwise estimated from best available data.

Flax fiber from the European Continent began to be available again after the close of the war, and the incentives for Empire production were thus weakened. Price guaranties by the Government were lowered or removed altogether, and returns from fiber production became less attractive. Many of the countries would like to retain at least a part of the industry that has been established, but acreages have decreased materially in nearly all parts of the Empire in 1945 and 1946.

United Kingdom - Northern Ireland

Huguenot refugees to the United Kingdom during the latter part of the sixteenth century brought with them an interest and skill developed from long experience in flax cultivation. Their influence stimulated the industry in their new home and caused considerable expansion. A peak of 300,000 acres throughout Ireland was reached in 1864, but a gradual recession began the next year and continued until 1915, when only about one-sixth as large an area was cultivated as at the peak. Northern Ireland continues, however, to be the chief flax-producing area in the United Kingdom.

Under the stress of need during World War I, cultivation in Northern Ireland rose to nearly 111,000 acres in 1918 but again declined steadily owing to the loss of workers to urban centers and the decreasing financial returns from flax, compared with those from other crops. Factories generally have preferred imported varieties of finer quality fiber. When the economic crisis of 1920-21 threatened the industry, the British Government granted subsidies to Irish growers to the amount of £27,000 ($104,000) during that crop year and £6,000 ($27,000) during 1921-22.

When the approach of World War II in Europe threatened the supply of fiber from the U.S.S.R., the Baltic States, Belgium, Netherlands, and France, the countries which supplied nearly 90 percent of British prewar consumption, the British Government became interested in greatly expanding the flax cultivation in England, Scotland, and Northern Ireland. A plan of price increases and subsidies was instituted.

Ground work had been laid throughout the years by a program of experimentation. Manurial treatment had been studied since 1901. Diseases and their treatment had been studied prior to 1921, with partial success, and were examined again during World War II. The technique of retting was studied with a view to finding the methods best adapted to the climate, soil, and flax variety of the country. Experts from the European Continent were brought in to assist in the work. The Ministry of Agriculture gave free advice and service in soil analysis to farmers desiring such service.

The Flax Development Committee was set up in April 1938 by the Government of Northern Ireland for the encouragement of flax growing.

This Committee was composed of 10 members and a secretary and represented organizations of spinners, farmers, industrial research workers, mill owners, and accountants in the flax-fiber and linen industry. Its work included a study of domestic flax production under conditions of competition in quality, handling, and price. It was financed by the Government up to ₤150,000 (nearly $668,000) during the first 3 years with the provision that 10 percent of the outlay would be provided by groups in agriculture or the linen trade who were interested in the work. Additional grants of ₤50,000 (more than $200,000) per year have been made on the same basis. Preferring a more secure basis for the industry than could be provided by a perpetual subsidy or price guaranty, the Committee spent the allotted money on research, investigation, and study of the methods of successful cultivation against competition.

Government pleas to patriotism and the availability of technical advice, by early 1942, were bolstered by financing the construction, in different communities, of four 4-tank retteries with a total daily capacity of about 4 long tons of deseeded straw per tank. The mill owner bought the straw from the farmer, sometimes even collecting it from the farm, leaving the grower responsible only for cultivation and pulling.

Immediately before World War II, flax sold at from 7 shillings 6 pence to 11 shillings per stone of 14 pounds (or 13 to 19 cents per pound), according to quality. Prices were fixed in 1939 by the British Ministry of Supply in association with the Ministry of Agriculture of Northern Ireland, and the guaranties have since been altered from time to time. All production has been purchased under contract by the United Kingdom Control of Flax Organization through the Crop Purchasing Section of the Belfast Control Organization.

The prices guaranteed in 1939 were from 10 shillings to 16 shillings 6 pence per stone (14.4 to 23.8 cents per pound), according to quality, with an average of 13 shillings 6 pence per stone (19.5 cents per pound). They were increased in 1940 to a range of from 17 shillings 6 pence to 22 shillings 6 pence per stone (25.2 to 32.4 cents per pound) with an average of 20 shillings per stone (28.8 cents per pound). The average during 1940 was 22 shillings 3 pence (32.1 cents per pound), and during 1941 it was 24 shillings 10 pence (35.8 cents per pound). In August 1942 the increases announced for the 1942 crop brought the price for dam-retted fiber to a range of from 26 shillings 6 pence (38.2 cents per pound) for Grade 6 to 31 shillings 6 pence (45.4 cents) for Grade 1. Dew-retted flax brought 1 shilling less per stone (or 1.4 cents less per pound) in each corresponding grade.

The 1943 and 1944 crops brought only 25 to 30 shillings per stone (36.0 to 43.2 cents per pound), according to grade of dam-retted fiber, but an additional payment of ₤10 ($40.35) was made to the grower for each acre harvested to the satisfaction of the Ministry. This acreage payment was the same as that for potatoes and compared favorable with the ₤3

($12.10) paid for rye. The Government refunded the entire cost of construction of approved retting dams. A subsidy to scutching mills covered the entire cost of renovating, or building, the mills; one-half of the amount was a grant and the other half was considered a loan. The scutching charge was fixed at the equivalent of 8 cents per pound of fiber output. The acreage bounty was lowered from £10 to £5 ($20.16) for the 1945 crop and was discontinued entirely in 1946.

The average price of fiber was increased in 1944, remained about constant in 1945 (in spite of the lowered bounty), and was lowered in 1946 by about 3 shillings and 6 pence per stone (about 5 cents per pound). The end of the war, making available cheaper flax from abroad, made the reduction necessary. As a result, however, at least 7 of the 22 flax factories built during the war were expected to close early in the year of 1946, and plantings for the new crop were expected to show a sharp decrease. The 1945 prices ranged from 26 shillings 1/2 penny to 31 shillings 1/2 penny (37.5 to 44.7 cents per pound) for dam-retted fiber and 1 shilling (1.4 cents) less for corresponding grades of dew-retted fiber. The bounty of £5 per acre was paid for either type of fiber, as well as for unretted straw, sold under an approved contract made prior to June 1, 1945. The prices announced November 13, 1945, for the 1946 crop were lower than for the preceding crop. (See table 2.)

Table 2. - NORTHERN IRELAND: Government prices for 1946 flax crop, announced November 13, 1945

Fiber	Price range, according to quality	
	Shillings and pence per stone	United States cents per pound
Dam-retted:		
Hand-scutched . . .	22/6 to 27/6	32.4 to 39.6
Turbine-scutched .	24/- to 29/-	34.6 to 41.8
Dew-retted:		
Hand-scutched . . .	21/6 to 26/6	31.0 to 38.2
Turbine-scutched .	23/- to 28/-	33.1 to 40.3

As early as 1940, the Ministry of Agriculture set up an official school with a course of 10 weeks for scutchers. A subsidy of £10 ($40.35) was allowed for each trainee, £2 ($8.07) of which went to the mill owner, and the balance was proportioned between the instructor and the trainee.

Flax-pulling machines which were ordered from Belgium a short time before the invasion could not be delivered; so experimentation has been carried on toward the perfection of such a machine in the United Kingdom.

Formerly, flax cultivation was on 20- to 40-acre plots on a 5-year rotation plan, averaging about 5 acres per farm, on an individual basis. In a move toward more uniform quality of output, the present plan is concentrated in districts, with the farmers working under expert supervision and using Government-approved and often Government-financed seed, manure, retting tanks, scutching mills, and pulling machines.

Standard wages for pulling and hand scutching were fixed early in 1943. Also effective about that time was a Fire Insurance Act for scutch mills and flax, which not only insured the farmer and mill owner against loss by fire but also enabled the Government to exercise greater control over that part of the industry. The new insurance was compulsory for those not already covered by insurance. A sum of 2 pence per stone ($0.002 per pound) on the scutched fiber was levied on both the farmer and the mill owner, and, in case of loss, a payment was made which would cover up to 50 percent of the cost of reinstatement as determined by the Ministry of Agriculture. Safety rules were instituted with requirements relating to stocks on hand, stack location, and provision of fire extinguishers.

An order by the Ministry of Supply in July 1945 was the twenty-second in a series of Control of Flax Orders issued since 1939. Some of them merely made changes in the guaranteed price, but others pertained to actual controls of cultivation and handling of flax. This one increased control by requiring scutch-millers to furnish returns and by regulating the acquisition, disposal, and re-scutching of dam-retted or dew-retted scutching rug ("rough tow") produced from Irish flax.

During the war, "natural" or "green" flax was used for military purposes, and large quantities of it were produced. The preparation of this type differs from that of others in that the straw is dried and scutched without having undergone the usual retting process. A private firm in Northern Ireland, in cooperation with the British Government, contracted with the farmers for cultivation of this type of flax. The firm exercised strict control over the preparation of the land and growing of the crop, including surveying, analysis of soil, manuring, rotation of crops, and the quality and disinfecting of seed. When the crop was ready, the firm harvested it and hauled the straw to the factory. All output of "green" flax was sold to the British Government. Since the close of the war, however, the authorities announced that they would make no further purchases of such fiber, beginning with the 1946 crop.

United Kingdom - Great Britain

The history of flax production in Scotland and England is much the same as that in Northern Ireland. Cultivation gained prominence about the middle of the nineteenth century and then declined until World War I. After a brief period of expansion during that war, the industry contracted again until by 1931 only a few hundred acres were in cultivation in Scotland, and only an experimental plot of 3 acres at Sandringham was reported in England. Later, however, flax was grown in Northampton County, England, in appreciable quantities, and the acreage was increased rapidly over a wider area in 1940 and 1941 when the war program was begun.

When flax supplies from Belgium and other continental countries were threatened in 1939, the British Government set a goal of 18,000 acres to be planted that year in Scotland and England. The next year a far greater increase was requested. Specified plots were selected, covering a total of more than 600 acres, or approximately one-fifth of the total flax area in Scotland, on which were kept complete records of methods, costs, and financial returns to be used as a basis of study and further experimentation. All production was under contract for the Scottish Flax Company, Ltd., at Blairgowrie in cooperation with the British Government. In England, similar studies were made in the same year, covering more than 700 acres under cultivation, in cooperation with the University of Reading.

The British Ministry of Agriculture, during the winter of 1941-42, established the wartime Flax Production Scheme. Results of prewar experiments at Sandringham and the Norfolk Research Station, as well as information gleaned from the 1940 records, were used as a basis of study, which was continued throughout the war. The Ministry financed the setting up of processing factories to produce fiber. The processors acted as agents of the Ministry and contracted with farmers to grow the straw; then the output of processed fiber became the property of the Ministry. Prices were fixed and kept as nearly as possible on a reasonable level with actual costs.

Mechanization, financed by the Government, was adopted wherever possible both as a substitute for manpower, which was extremely scarce, and as a means of lowering unit costs. The system of subsidies, controls, and acreage bounties was effective in Great Britain on the same basis as it was in Northern Ireland. Educational meetings for farmers were held to create interest in the industry and to utilize every means available toward improvement in the quality of fiber. The use of byproducts was encouraged. Artificial drying was studied as a means of allowing year-round use of the scutching factories, and experiments were made to find an economical means of drying. Methods compatible with the cooler climate and shorter season of Scotland were applied there.

Minimum wage rates for workers in the flax and hemp trades became effective in Great Britain on January 16, 1942. The wages prior to that time had been too low to encourage workers to remain in the industry.

Seed was needed for planting throughout Great Britain, but the climate and general methods of flax culture and processing in Northern Ireland results in a small production of seed. The Ministry of Agriculture urged that a greater proportion of the flax grown in England be processed as "green" flax in order to save the seed. The unretted flax could be used during the war period in the manufacture of war goods, but purchases of such fiber were terminated at the close of hostilities.

Late in 1945, the Ministry of Supply reduced prices of home-grown flax of the 1946 crop from an average of approximately 28 shillings per stone to about 25 shillings per stone (from 40.3 to 36.0 cents per pound). Also, the bounty payment of £5 ($20.16) per acre was abolished in 1945.

Wartime contracts for flax production in Scotland will not be renewed after the 1945-46 season, and no directions for growing flax will be issued during 1946. The Directorate of Flax Production closed down the three processing factories.

In England, the Flax Production Scheme has been continued with the announced intention of peacetime experimentation to extend through the 1948 harvest. The Government has guaranteed a market for the crop from a total area of not less than 20,000 acres, or about one-third of the peak acreage of 1944. The specific acreage for assured marketing will be determined from year to year. The contracts cover 25,000 acres for 1946 or considerably less than the 45,000 acres reported under cultivation in 1945.

Eire

Fiber-flax acreage in Eire decreased from approximately 10,000 acres during World War I to a low of only a few hundred acres in 1932 but increased rapidly under Government encouragement when fiber supplies from the European Continent were cut off by World War II. Flax plantings exceeded 30,000 acres in both 1944 and 1945.

The British Ministry of Supply undertook to purchase all flax crops in Eire for the duration of the war, and one year thereafter, and guaranteed that it would supply Eire with binder twine or suitable fiber for its manufacture. Prices were fixed each year at a level above prewar prices and were announced in advance of the planting season for the crop affected. The Flax Act, which was passed by the Eireann Legislature in 1936, provided for a bounty payment of £10 (or the equivalent of $49.71) per acre to flax growers. No bounty has been paid since 1940, however, because of the higher flax prices.

The prices for the 1941 crop ranged from 17 shillings 6 pence to 22 shillings 6 pence per stone of 14 pounds (25.2 to 18.0 cents per pound), a rise of one shilling (1.4 cents) per stone for each higher grade. In 1942, the prices were raised and guaranteed on all the crop grown on a total area of up to 25,000 acres, an area greater than was obtained in that particular year. Prices guaranteed by the British Ministry of Supply for dam-retted flax fiber grown in Eire for the 1942 and 1943 crops were equivalent to the following amounts in terms of cents per pound:

Grade	1942	1943
1	38.0	43.1
2	36.6	41.7
3	35.2	40.3
4	33.8	38.8
5	32.3	37.3
6	30.9	35.9

Prices for green flax of the 1943 crop were fixed at from £90 to £150 per long ton (between 16.2 and 27.0 cents per pound), according to grade.

The British Government arranged for supplies of seed and fertilizers for Eire growers and offered a bonus payment to be paid if a substantial increase in total area of dam-retted flax were attained. In addition to the rise in the 1943 price paid directly to the grower, £1 ($4.04) per acre was paid for the erection of a dam, and a bonus of 1 shilling 6 pence per stone (2.2 cents per pound) was paid to the new Flax Development Board, which retained part of it for defraying the costs of operation and passed part of it on to the growers. The price paid for the 1945 crop was fixed at 25 to 30 shillings (36.0 to 43.2 cents) for dam-retted, hand-scutched flax, with a subsidy payment promised to growers if the prices fell below standard.

The maximum charge for scutching flax was reduced by an order of the Department of Agriculture in August 1945 from 4 shillings to 3 shillings 9 pence per stone (from 5.8 to 5.4 cents per pound) of scutched fiber when the tow is retained by the scutch miller, and from 5 shillings 6 pence to 5 shillings 3 pence per stone (from 7.9 to 7.6 cents per pound) in all other cases. The maximum charge for scutching tow was reduced from 4 shillings to 3 shillings 9 pence per stone (from 5.8 to 5.4 cents per pound) of scutched tow produced.

The Flax Development Board was established by the Department of Agriculture in 1943 as a semigovernmental organization to assist generally in the expansion of the flax industry. It has been instrumental in training new workers in the scutching process, making grants toward the cost of erecting new scutching mills and repairing or extending old ones, providing turbine scutching units, and constructing or renovating flax dams.

Beginning with the 1945 crop the British Ministry of Supply announced that it would no longer purchase green flax fiber or tow, which had been used in large quantities during the war.

The 1946 contracts guarantee to growers a price of 20 to 25 shillings per stone (28.8 to 36.0 cents per pound), according to grade, for dam-retted, hand-scutched flax and 21 shillings 6 pence to 26 shillings 6 pence (31.0 to 38.2 cents per pound) for dam-retted, turbine-scutched flax. The price for tow was set at £71 to £81 per long ton (12.8 to 14.6 cents per pound), according to grade. Seed was made available in the flax-growing areas at a retail price of 57 shillings 6 pence per hundredweight (10.4 cents per pound). Also, a limited supply of muriate of potash to be used for flax only was made available at a price fixed at 5 shillings per hundredweight (90 cents per 100 pounds) less than in 1945. The Government of Eire is continuing a program of encouragement and experimentation directed toward maintaining a fixed minimum planted area and improving the quality of output.

Canada

Historically, flax-fiber production in Canada has been small, except during war periods. Production was expanded considerably during World War I in order to help supply the needs of the United Kingdom, but postwar production suffered in competition with European flax, which could be produced at a lower cost. Fiber output gradually dropped again to a very small quantity. Acreage from 1921 through 1937 averaged little more than 5,000 acres. Fiber flax continued to be grown, but principally for upholstery tow and for seed to be exported to fiber-producing countries, such as Northern Ireland.

No general Government plan was in operation during the peace years for monopoly or subsidization of the production or exports of flax fiber. The government of the Province of Quebec, where production is centered, encouraged the industry by furnishing expert advice both on the production of fiber and on the manufacture of linen. It also loaned farm machinery and seed to growers.

An increase in fiber production occurred between 1936 and 1939 principally because the Government encouraged the adoption of modern milling and labor-saving machinery for pulling and handling the crop--instead of hand methods--which reduced the cost of production. During the recent war, the Government not only financed the procurement of necessary processing machinery and authorized the manufacture of special kinds that were needed, but it also controlled exports of all flax machinery by a system of licensing in order to ensure an adequate supply of machinery for the home industry. The machines were sold to processors without profit.

When World War II began and cut off the supply of European fiber from the United Kingdom, the British Ministry of Supply requested the Canadian Government to urge rapid expansion of the fiber-flax industry of Canada. The Special Products Board there cooperated with the Ministry of Supply and obtained an acreage in 1940 of nearly two and a half times that of the preceding year. Flax plantings exceeded 47,000 acres by 1942, but they declined during the following 2 years, and amounted to only a little more than 21,000 acres in 1945.

The Board paid the wages and expenses of a number of temporary seed inspectors required for field inspection of the fiber-flax crop. The chief efforts of the Board, however, have been centered on mechanization of the industry.

A Fiber Flax Administrator was appointed in November 1941 to bring the exportation and domestic marketing of flax-straw products under sufficient control for an effective program.

An arrangement between the Canadian Special Products Board and the British Ministry of Supply provided that the crop of the scutching year beginning September 15, 1941, should be divided in such a way that 50 percent, by grades, of all suitable Canadian fiber and tow would be shipped to the United Kingdom, and the other 50 percent be made available for the United States and Canada. The sales to the United Kingdom were made to the British Ministry of Supply and those to the United States direct by the Canadian processor to the United States spinning mills. The latter sales were subject to export permit, because of the higher price prevailing in the United States, in order to keep shipments divided equally by grades.

The marketing policy was changed in August 1942. By the new agreement, the Special Products Board purchased all flax and tow of spinnable quality and then resold it, less essential Canadian requirements, at the same price to both the British and United States Governments on a 50-50 basis of quality.

All spinnable material was graded according to grade standards approved by regulation to the Order-in-Council P.C. 8590 of November 4, 1941, and acceptable to agencies of the purchasing Governments. Shipments to the United Kingdom were reinspected by a representative of the British Ministry of Supply for his Government, but those to the United States were inspected at the destination. A storage warehouse for stocks awaiting shipping space was operated in Montreal by the Special Products Board on behalf of the British Ministry of Supply during the winter of 1942-43.

Prices were set each year. Those for the 1942-43 crop year were set, f.o.b. rail shipping point of the processor (table 3).

Table 3. - CANADA: Flax-fiber prices established for the 1942-43 crop year

Flax	Canada grade	Canada	United States equivalent at official rate
		Cents per pound	Cents per pound
Scutched flax	1	45	40.9
" "	2	43	39.1
" "	3	41	37.3
" "	4	37	33.6
Tow, pluckings	Pl	24	21.8
Tow, tossed flax	A	22	20.0
" " "	B	20	18.2
" " "	C	18	16.4
Turbine tow	1	16	14.5
" "	2	13	11.8
" "	3	11	10.0

The price for the 1943-44 crop was raised to 55 cents a pound (50 cents, U.S.) for Canada grade 1 scutched flax, f.o.b. local shipping point, and left at 22 cents per pound (20 cents, U.S.) for grade A scutched tow, amounting to an average all-grade increase of approximately 7 percent over the preceding year. The same price was effective throughout the season ending September 14, 1946.

The price fixed in Canada was considerably below prices prevailing in the United States. This is partially explainable by the fact that Canadian flax is dew-retted and, consequently, somewhat lower in quality than water-retted fiber of the United States. Nevertheless, the Board was able to make profits on its sales to the United States; which, however, were offset in large part by losses on sales to Canadian and British processors at low fixed prices.

Experimental plantings by private firms were made in Manitoba, and a pilot plant was established at Portage la Prairie by the Dominion Government for retting and scutching the crop. In British Columbia, the legislature of the Province granted a sum of money to be loaned without interest for the construction of scutching mills. Loans were made in Ontario and Quebec for cooperatively owned scutching plants as a part of the general aid to cooperative organizations.

An Order-in-Council, which was recommended by the Agricultural Supplies Board in 1945, provided that $220,000 in Canadian funds (the equivalent of about $200,000 in United States currency) from the war appropriation to the Department of Agriculture could be used as rebates up to one-third of the purchase price of essential machinery bought by processors between January 1, 1940, and March 31, 1945. Such machinery had necessarily been bought at a high price. The increased need for it with the expanding production program in Canada was made acute by the impossibility of obtaining it in Europe and the resulting necessity of manufacturing it in Canada under wartime conditions of high costs. The cost of this machinery to the processors could not be passed on because of the fixed price of fiber.

The last of the fiber-flax export contracts with the British Ministry of Supply terminated with the close of the 1945-46 flax crop year, and guaranteed sales and prices terminated with them. The British Government offered to purchase during the following year as much as 500 long tons of line fiber and 1,000 long tons of tow at prices based on 39 cents and 16 cents (or 33.6 and 14.5 cents, United States) per pound, respectively, for top-grade quality. The remainder of the crop was left to be sold on the regular market. These prices were 16 cents (14.5 cents, United States) below the 1946 price for line fiber and 6 cents (5.5 cents, United States) below that for tow. No contracts were made, however.

Australia

During the 5 years, March 1, 1930, to February 28, 1935, the Government of Australia paid a bounty to farmers on the flax and linseed produced. The Flax and Linseed Bounty Act of 1930 provided rates as follows:

Years	Rate of bounty
March 1, 1930 - February 28, 1932....	15% of market value of flax or linseed.
March 1, 1932 - February 28, 1934....	10% of market value of flax or linseed.
March 1, 1934 - February 28, 1935....	7-1/2% of market value of flax or linseed.

Production was small, and during 1933-34 the bounty was paid on only about 61 tons (2,240 pounds each) of flax. The bounty was not renewed in 1935. The full amount granted was £2,839 (about $11,158).

When World War II prevented imports of flax into the United Kingdom from continental Europe, the Mother Country encouraged flax production in the Dominions as well as at home. In Australia, the Commonwealth Flax Production Committee was appointed in 1940. Under war regulations, provision was made for the payment of a guaranteed price to growers for the flax they produced, for treating and sale of the flax and flax products, and for the expenses of the Committee in developing and controlling the industry. The flax mills constructed for processing the straw were owned and controlled by the Commonwealth Government.

Growers produced their crop under contracts with the Commonwealth Government, and received a guaranteed price for their flax. Producers agreed to grow a specified number of acres of flax in a particular district, on approved land, from seed supplied by the Department of Agriculture at a fixed price of 5 shillings (or 80.7 cents) per bushel. The guaranteed price was paid according to the quality of the product. Straw of standard quality was purchased from farmers at £5 ($16.14) per long ton in 1940. The Committee supervised the planting, cultivation, harvesting, and delivery of the crop. Mechanization was encouraged, and its extensive use was an important factor in keeping the cost of production on a level that was comparably favorable with costs elsewhere.[1]

Table 4. - AUSTRALIA: Flax-fiber prices per long ton established under contract, with estimated average received by farmers

Year	Standard price		Maximum price (including bonus)		Estimated average price to farmers	
	Australian	U.S. equivalent	Australian	U.S. equivalent	Australian	U.S. equivalent
	£ s. d.	Dollars	£ s. d.	Dollars	£ s. d.	Dollars
1940	5 0 0	16.14	6 0 0	19.37	5 10 0	17.75
1941	5 15 0	18.56	7 10 0	24.21	6 12 6	21.39
1942	6 5 0	20.18	7 10 0	24.21	6 12 6	21.39
1943	8 0 0	25.82	10 0 0	32.28	a/9 0 0	29.05

a/ Preliminary estimate.

The guaranteed gross return to farmers performing all prescribed operations to the satisfaction of the State Department of Agriculture was £4 10s. ($14.53) per acre, except that reductions from the amount were made for any operations not performed according to contract. Exports of flax, flax products, and manufactures containing flax were prohibited by a Proclamation of September 10, 1940, except with the consent of the Minister of Trade and Customs.

The estimated average cost of growing and delivering the crop to the mill is £5 8s. ($17.43) per acre. (For the price of flax, as established under contract, see table 4.)

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[1] Flax is not pulled as in many other countries but is cut by machinery. When a binder is used, the straw usually is deseeded and then retted in tanks at the mills. The reaper-spreader, however, cuts the straw and spreads it for retting in one operation. Dew-retting is satisfactory in the Australian climate.

Compensation to Western Australian farmers during the 1942-43 season was paid on a basis of £3 10 s. ($11.30) per acre for areas planted but not harvested plus any additional payment necessary to make the amount received from that land equal to the amount received from the acre yield of the crop harvested (including debit for seed of approximately £1 ($3.23) per acre in every case). Penalty rates were applicable on weeds where they occurred to the extent of over 10 percent of the crop.

Production was concentrated at first in Victoria and Tasmania, where conditions seemed most favorable, but experiments were made in other localities and production was extended to Western and South Australia. During the war program, the committee plan for 70,000 acres was never realized, but cultivation expanded from about 2,000 acres in the 1939-40 season in Victoria only to about 57,000 acres in 1942-43 extending over four States. Acreage remained close to the higher level throughout the remainder of the war period.

New Zealand

Only trial plots of fiber flax were in existence in New Zealand before World War II, but experimentation had progressed far enough to afford much background data when the British Government requested aid in supplying British factories with fiber. The wartime agreement between the British Ministry of Supply and the New Zealand Minister of Industries and Commerce began with the 1939-40 crop and provided for extension through the 1945-46 season for all fiber flax planted by November 30, 1945, or a period including the duration of the war with Germany and 1 year afterward.

The Prime Minister of New Zealand appealed to the farmers of the best-suited localities to prepare their land for September planting of seed to be sent from England, and the British Government guaranteed to New Zealand the cost of production and agreed to pay for the fiber according to quality up to £ N.Z. 36 ($110.30) per ton of 2,240 pounds with a minimum of £ N.Z. 5 ($15.32) per acre to growers. Advances roughly equal to the cash operating costs were made as flax was delivered and final settlement was deferred. Prices for later years were mutually agreed upon.

All crops were pledged to the United Kingdom, which financed the construction and equipping of factories for tank-retting and processing the fiber and met practically the total cost of production. The project was considered a State enterprise, and the losses each year were treated as a part of the cost of the war.

The New Zealand Department of Industries and Commerce continued experimentation with manufacturing equipment and methods, quality of fiber production, suitable types of land, and the most economic use of byproducts for industrial purposes. The Linen Flax Corporations Act, which set up a monopoly by the Government but not within any Government Department, was enacted December 7, 1945, for control of the growing, harvesting, purchasing, processing, and marketing of fiber flax and flax products. The Corporation consists of eight directors appointed by the Governor-General on the recommendation of the Minister of Industries and Commerce and so chosen as to represent equally (1) the Government, (2) the flax growers, (3) manufacturers of flax products, and (4) the employees of the Corporation. Each director serves a term of 2 years but may be reappointed for succeeding terms. The Corporation either may grow and harvest the crop and own and operate the factories, machinery, and equipment used in handling, processing, and manufacturing the fiber into flax products, or it may merely arrange for others to carry on these operations for it.

British East Africa

Flax cultivation was expanded in British East Africa during World War I, but, when the price dropped immediately after the war from £500 (nearly $2,500 then) per long ton to about £75 or £80 (about $400) per long ton, production fell to almost nothing. Through a system of contracts carrying guaranteed prices with the British Ministry of Supply during World War II, production was again increased for wartime needs.

A study of the industry in British East Africa was made in 1938 by an expert from the Northern Ireland Ministry of Agriculture, and a substantial grant from the Colonial Development Fund was recommended for the reestablishment of the industry. Experiments were made in Uganda, but Kenya continued to be the leading producer. The Kenya Flax Board was operating 12 flax processing plants in 1943. The British Ministry of Supply purchased the entire output at guaranteed prices, which were at a favorable level as compared with those for wheat, which is normally the preferred crop. Acreage, which had been practically nothing during the two decades from 1920 to 1939, was increased to a peak of about 16,000 acres in 1943 from which a crop of more than a million pounds of line fiber was produced. Acreage has decreased rapidly, however, since 1943.

The prices guaranteed to Kenya growers under the subsidy plan were as follows for the 1945 crop: 50 shillings ($10.11) per acre, plus an extra 25 shillings ($5.06) for borderline crops, and also an extra 25 shillings ($5.06) when a farmer was ordered by an Agricultural Officer to send flax straw to a factory for scutching. A price of 75 shillings ($15.17) per acre was guaranteed for retted flax, and 100 shillings ($20.23) for scutched flax. A direct grant for breaking new ground, when so ordered, amounted to a minimum of 20 shillings ($4.05), and in unusual cases to as much as 50 shillings ($10.11), per acre.

The British contracts were not renewed for the 1946 plantings, the crop from which will be marketed in 1947. The Flax Board of Kenya voted to give no more planting orders and to guarantee no further returns to growers of flax.

India

Flax cultivation in India has progressed little past the experimental stage, in spite of guaranties against loss to the growers and other efforts to encourage expansion. Flax was grown successfully in Bengal during World War I, but production during the peace years which followed was insignificant. Some experimentation was carried on by groups interested in providing more diversified farming in the jute areas and by jute companies interested in mixing flax with jute in order to obtain greater strength in jute products with no appreciable increase in cost.

When the outbreak of World War II caused Great Britain to seek greater supplies of flax within the Empire, India responded with a Government-approved plan for flax-fiber cultivation which was to cost a total of about £400,000 ($1,600,000). The Provincial government of Bengal cooperated.

Seed was purchased in 1940 for several experimental plantings on about 1,200 acres in Bihar and Bengal. The Government guaranteed cultivators against risks involved in growing an unfamiliar crop, appropriated funds for the purchase of seeds and processing machinery, set aside land to be planted to flax, and appointed a committee of experts to study the problem, watch progress, and act as teachers until cultivation had been established on a commercial basis.

The Imperial Council of Agricultural Research submitted a research project for the purpose of developing flax varieties which would yield fiber of a better quality from the straw left from oilseed crops. Oil varieties are cultivated extensively in India. Tests were made in hybridization and in the use of the fiber in various manufactured materials. Production has not been extended, however, beyond the experimental stage in India.

COUNTRIES OF NORTHWESTERN EUROPE

Most of the European countries grow flax for both fiber and seed, and agricultural reports usually do not give separate acreage data for the two kinds of plants. Fiber is an important crop, however, in all the flax-growing areas. The countries of northwestern Europe, although exceeded in total acreage by several other countries, normally furnish most of the finest quality of the world's flax-fiber supply.

The total annual area for both fiber and seed in France, Belgium, and the Netherlands averaged close to 160,000 acres during the 15 years from 1925 to 1939. Fiber production averaged nearly 115 million pounds.

Acreage did not remain constant, however, and the average for the second 5 years of the period fell to approximately one-half of that of the first 5. According to preliminary estimates, the average acreage during 1940-44 for these countries, plus newly extended fiber acreages in Denmark and Sweden, was somewhat less than 200,000 acres, or a decrease of more than 10,000 acres from the average immediately preceding World War II. (See table 5.)

Table 5. - NORTHWESTERN EUROPE: Flax-fiber acreages by 5-year averages, 1925-44

Country	1925-29	1930-34	1935-39	1940-44 a/
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
France . . .	76	44	92	89
Belgium . .	59	35	75	47
Netherlands.	37	17	42	43
Denmark . .	-	-	-	14
Sweden . . .	-	-	-	5
Total . .	172	96	209	198

a/ Preliminary estimates, subject to revision.

Compiled from official sources where possible, otherwise estimated from best available data.

The prewar market for flax from northwestern Europe improved in later years, but, when the Axis occupation forces spread over the area, France, Belgium, and the Netherlands lost large markets for flax fiber. Production was encouraged by Germany, however, because textile fibers were needed by the Axis countries. The industry did not expand under conditions of the German occupation, and some loss was suffered from military action. The postwar demand for textile fibers is expected to have an encouraging influence on flax-fiber production in the early postwar years.

Belgium

Belgium not only produces flax fiber of exceedingly high quality but also processes large quantities of straw grown in France. Belgian fiber is in great demand by manufacturers of fine linens.

There was no subsidy on either production or exports of flax in Belgium before the war. A campaign to increase production was begun in 1941 and continued throughout the occupation period. In 1943 premiums of linen allotments were offered in order to encourage increased production. The German military authorities decreed the following year that each person who had cultivated flax in 1943 should plant twice as many acres in 1944. The plan did not seem to succeed under the wartime conditions, however, because acreage was reported to be smaller in 1944 than it had been in 1941, when a relatively small crop had been planted. The planted area increased to more than 60,000 acres in 1945, the first year after the German withdrawal.

Prices were controlled through setting maximums according to quality. The conditions in German-controlled Belgium, with acreages fixed by military decree, differed from those in many other countries where minimum prices were set as an inducement for farmers to extend their flax acreages.

Netherlands

A flax monopoly controlled cultivation in the Netherlands for some time before the war. A law, passed in November 1934, extended the Government aid granted to the flax industry to the amount of 1,350,000 florins ($910,000) in order to encourage increased production and processing. Only members of the Provincial Agricultural Emergency Organization were eligible for aid and then only if they grew flax on a portion of the 6,000 hectares (14,826 acres) allotted to them by that Government agency.

Payments of 50 florins per hectare ($13.63 per acre) of flax grown were made both to growers and brakers. Brakers received the payments whether they were the growers or dressers. Processors were paid 125 florins per hectare ($34.09 per acre) for processing flax grown by Dutch producer-members of the Organization upon presentation of a certificate showing that the flax being processed was of the required origin.

A considerable reduction in export monopoly fees was made early in 1940 on the 9 regular varieties of flax and flax products.

More recent data on the amount of premiums are not at hand, but unofficial information during the recent war years indicates that premiums were then offered in the form of a certain quantity of linen fabric for every 1,000 kilograms (2,205 pounds) of flax delivered. Government authorities continued their program of encouragement to flax growers and opened the Institute for the Research of Netherlands Flax Cultivation for the purpose of conducting research to help both growers and manufacturers.

France

French fiber-flax acreage was at a peak in 1929 but dropped more than 79 percent during the next 3 years in the face of competition from imported flax, which came principally from Russia. In 1930, some restrictions through licensing were placed on imports of flax, but acreages continued for 2 more years to toboggan at an alarming rate. A system of premiums to encourage production was begun with a law on July 4, 1941, allowing payments to be made up to 60,000,000 francs ($2,352,000) per year. The premiums were paid for stripped flax in the straw, of French origin, and retted on French territory. They were effective for a period of 6 years beginning with the 1931-32 flax year. The amount of premium per year and the conditions of payment were subject to orders by the Ministry of Agriculture and were fixed in accordance with the area planted, the forecast for the crop, and the condition of the market.

An export bounty was provided for in August 1934 to be effective during the 1934-35 flax year. The payments, made on exports of flax in the straw, and fixed at two-thirds the basic production premium, amounted to 2.90 francs per kilogram (8.7 cents per pound) during the first year.

The production premium during 1934-35 was set at 4.35 francs per kilogram (13.0 cents per pound) with variations as follows:

> The premium was based on a price of 6.15 francs per kilogram (18.4 cents per pound) for Russian ground-retted flax of first quality in official price quotations of the Flax Exchange at Lille. Should the average quoted price for any 1 month exceed that base, a similar amount was deducted from the premium of 4.35 francs (13.0 cents) during the following month.
>
> Also, if the average price of all qualities of flax quoted on the Exchange exceeded 10.50 francs per kilogram (31.4 cents per pound), no premium was paid until the average fell again to below that amount.

The premium was lowered to 3.85 francs per kilogram (10.7 cents per pound) during 1935-36 and to 3.30 francs (6.1 cents) the following year based on a market price of 7.20 francs (13.2 cents) on the Exchange and a corresponding maximum average of 10.50 francs per kilogram (19.3 cents per pound). A premium of 3.90 francs (3.7 cents per pound) was allowed during 1937-38 while the Exchange price did not exceed 9.75 francs per kilogram (9.2 cents per pound). If Russian flax sold at a higher price, the premium on French flax sold or exported that month was decreased by the amount of the difference, and all premiums were suspended if the Exchange price exceeded 13.65 francs per kilogram (12.9 cents per pound). The export-bounty ratio was changed from two-thirds to 40 percent of the production premium.

Imports of flax seed for planting were allowed to be imported duty-free under a modification in January 1937 of a decree which originated in December 1933. This seed was required to be in a sealed bag that contained a certificate stating (1) the name of the country of production, (2) the commercial mark under which the seed was sold, (3) the percentage of impurities it contained, (4) the color of the flower, and (5) the year of harvest. Associations or individuals receiving the duty-free seed were required to show proof that the seed was used for planting.

Little information is available concerning the program after the beginning of the war, but premiums continued to be granted to growers of flax. During 1943-44 they took the form of fertilizer and permits to purchase linen textiles.

The organization in about 1943 of flax farmers into the Groupement National Interprofessionel Linier was a new feature in France and was an influence toward obtaining increased production in the occupation period.

Denmark

Flax has been grown in Denmark for many years, but for some time prior to World War II cultivation had been almost negligible in acreage. When the war cut off imports from other countries, a movement began in Denmark to increase flax-fiber production to self-sufficiency.

Cultivation contracts were signed with the farmers, and production was urged through the public press. Experiments were carried on in the use of waste. Spinning factories were made available to the flax industry so that Denmark need not send its fiber to other countries for that process. An unofficial report available in 1944 stated that prices were fixed at a level to ensure a profit to farmers that would be 33 percent above the gross profit that would be made on barley.

Sweden

Flax was an important crop of Sweden about the middle of the nineteenth century, but production had declined before World War II to an insignificant amount which was used in the domestic handicraft industry. Acreage had declined from about 40,000 to about 400 acres. Approximately 95 percent of the country's flax needs were supplied by imports from the Baltic States, Poland, Netherlands, and Belgium. With the outbreak of war in Europe, imports from other European countries were hampered and soon cut off completely. A total of less than 95,000 pounds of flax fiber was imported from all countries during 1944. The need for fiber caused the Government to make great efforts to increase domestic production. Cultivation was urged especially in areas that had formerly been the largest producers. The Government granted loans, subsidies, and outright grants of money to growers' associations and rendered technical assistance in every way. New machinery and methods, together with guaranteed prices, aided in making cultivation profitable during the war.

Six growers' associations have been organized throughout the country since 1939, and each association has erected a processing plant. The first was constructed in 1939 in southwestern Sweden with a capacity to handle the straw from about 1,000 hectares (2,471 acres). In 1940 the Riksdag authorized the granting of loans from the Home Craft Loan Fund to growers' associations for the purpose of establishing processing plants and immediately allocated 300,000 crowns ($71,406) to it. Later in the year an allotment of 1,500,000 crowns (more than $357,000) was made, followed by an equal amount in 1941 and 3,000,000 crowns (more than $714,000) in 1943.

The price of flax straw based on class 1 was guaranteed late in 1940 at 80 percent of the price of rye from the same year's harvest but never to exceed a subsidy of 200 crowns per hectare ($19.26 per acre) of fiber flax. The guaranty was to be effective for 3 years, but in 1941 it was extended to the end of 1946. In 1943 the maximum subsidy allowed per acre was raised from 200 to 450 crowns per hectare (to $43.36 per acre). At that time the price of class-1 straw was 20 crowns per 100 kilograms ($2.16 per 100 pounds), or from 60 to 500 crowns per 100 kilograms ($6.48 to $54.00 per 100 pounds) of fiber, according to quality. Swedish fiber is classified into 10 qualities. During 1945, seed-stripped straw sold in the six grades from E.P. to IV at 30, 25, 20, 17, 14, and 11 öre per kilogram (or the equivalent of 3.2, 2.7, 2.2, 1.8, 1.5, and 1.2 cents per pound), respectively.

In 1941, subsidies for building processing plants were granted without obligation of repayment. An amount of 500,000 crowns ($119,010) was allocated that year for such payments and 800,000 crowns ($190,480) in 1943. These subsidies were granted in amounts up to 15 percent of the construction cost, and the other 85 percent was financed by loans from the Fund.

The loans were restricted, beginning 1942, by agreements that the owner associations should limit dividends to stockholders during the guaranty period so as to reduce the loans to a reasonable balance by the end of the period. The following year the guaranty period was prolonged to cover 5 years from the beginning of amortization of the cost of the specified plant, but it was not to extend beyond 1950.

An extra allotment to growers was announced early in 1943. This amounted to 200 kilograms of oil cake and meal for each hectare (or nearly 178.5 pounds for each acre) of cultivated land planted to fiber flax. When farmers delivered their dried straw to the processing plant, they received not only the price of the straw according to quality but also 5 kilograms (11 pounds) of fiber for the crop.

Supervision of production is vested in the Government Flax Board, which cooperates with the growers through their organizations and gives aid of many kinds, including the loans and subsidies already described.

Sales are handled by a central organization of the various growers' associations which is known as the Swedish Federation of Flax and Hemp Growers. It sells both flax and hemp under contract from finishing plants to the consumer spinning mills. The fiber moves to market throughout the year.

The last of the six processing plants began operation in 1944. Together they have a capacity for handling fiber from approximately 4,500 hectares (9,921 acres), although plantings amounted to less than 4,000 (8,818 acres) in 1944. No more plants are planned, but the amortization plan and guaranteed payments extending up to 1950 were designed to place those now established in a position to continue operation and meet a large part of Sweden's domestic demand for fiber.

COUNTRIES OF EASTERN EUROPE

During the 15 years preceding World War II, the countries of eastern Europe accounted for more than 90 percent of the world's flax-fiber acreage. Flax acreages in Estonia, Latvia, Lithuania, and Poland are relatively large in proportion to total arable land, and the Union of Soviet Socialist Republics has by far the largest flax production in the world.

Table 6. - EASTERN EUROPE: Flax-fiber acreages, by 5-year averages, 1925-44, with comparisons

Countries	1925-29	1930-34	1935-39	1940-44 a/
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Eastern Europe:				
U.S.S.R. b/	3,221	5,513	4,973	3,264
Poland	276	253	340	366
Lithuania	211	148	204	173
Latvia	163	105	164	170
Estonia	89	51	66	64
Total c/	3,960	6,070	5,747	4,037
All other countries c/	483	334	650	1,223

a/ Preliminary estimates, subject to revision.
b/ Area planted to Dolgunetz, the principal fiber variety.
c/ Excludes area cultivated for seed only.

Compiled from official records where available; otherwise estimated from best available data.

The trend of flax plantings in the Soviet Union has differed from that in nearly all the other producing countries. The average acreage during the 5-year period 1930-34 increased over the average of the preceding 5-year period by at least 70 percent, or from 3,221,000 to 5,513,000 acres, at the same time that practically all other countries were planting less flax. During the period 1935-39, the average decreased by nearly 10 percent to 4,973,000 acres, whereas the acreage in other countries increased by more than half.

Considerable war damage occurred in the flax-producing areas during the period of hostilities, and the average acreage during 1940-44 fell to about the level of 15 years earlier. (See table 6.) Postwar plans provide not only for restoration of the industry but for a sizable increase over the maximum prewar production.

Union of Soviet Socialist Republics

The U.S.S.R. ranks first among flax-producing countries. During the years 1929-38 the area planted annually to the Dolgunetz or fiber variety averaged about 5,200,000 acres, which returned an average annual production of about 1,142 million pounds of fiber, or close to three-fourths of the world production during that period.

Under the Soviet plan, all economic activities are under Government control. Prior to 1941, a contract system for flax production was in effect. A national plan of crop acreages was formulated; then the distribution was controlled through a system of contracts between the Government and the collective farms. The contracts were based on the average former yields and areas sown in each particular district. Prices varied with the region. Delivery quotas were fixed so that the State acquired practically all of the crop. Tax benefits were allowed for producing the quota, but failure to meet the quota resulted only in a proportionate loss of income.

Delivery of quantities in excess of the quota was encouraged by making incentive payments of increasing amounts per quintal (220.46 pounds) as the deliveries exceeded larger quotas. For instance, if the quota in a certain district was fixed at 1 to 1.5 quintals per hectare (89 to 134 pounds per acre), the supplementary price was 50 percent of the contract price; but, if the quota was as much as 3 quintals (368 pounds per acre), the supplementary price was 200 percent of the regular price.

The procurement plan replaced the contract system in March 1941. Under the new system, quotas and prices were fixed but delivery was compulsory. The quotas were based on the number of hectares (2.471 acres) of arable land on each collective farm in the flax-growing regions. The payments were made in rubles to the collective farm upon delivery of its quota, and the price varied according to type and quality over a wide range covering 32 grades of flax. Besides the cash received for the crop, the farm was entitled to purchase at special prices a quantity of vegetable fats and oil cake amounting to 2 kilograms (4.4 pounds) of the former and 15 kilograms (33.0 pounds) of the latter for each quintal of flax.

Excess deliveries were encouraged by incentive payments two to four times the quota price for quantities 10 to 150 percent above the quota of deliveries required and by allowing farm purchases of 12 kilograms (26.5 pounds) of vegetable oil and 35 kilograms (77 pounds) of oil cake per quintal of excess flax deliveries.

Although each collective farm was free to decide its own method of distribution of all payments and privileges among the individual members, the standard method was reported to be according to the type and amount of labor invested.

After 4 years of operation under the decree of 1941, a new decree was issued in July 1945 to supplement the one in force. Bonuses were provided for payment to farm members for production and delivery of flax in excess of the set quotas. These were provided as an incentive to the individuals and were paid by the collective farm. Each member was paid outright, not just given the privilege of buying, an extra two kilograms (4.4 pounds) of grain and also 1 ruble in cash for each 10 kilograms (21.4 cents for each 2.5 pounds) of flax sorted, dried, and delivered to the factory. An additional kilogram (2.2 pounds) of grain and one ruble (18.9 cents) in cash were paid for each 100 kilograms (220.5 pounds) of flax delivered. The flax workers of each farm were given 40 percent of the farm's incentive payments for excess quantities delivered as their special share of the income.

Under the Soviet system machine-tractor stations had available for the use of flax growers supplies of tractors, seeders, threshers, and machines for pulling and scutching flax.

Occupied regions of Russia during the war were organized under a Reich General Directorate of Monopolies, and a plan of compulsory delivery quotas was inaugurated by decree with provision for premiums in the form of purchase permits for textiles and clothing.

Although flax production was encouraged throughout the war, both acreage and average yield per acre decreased from those of prewar crops. During 1945 the yield was reported at about 165 pounds to the acre, or only about two-thirds as much as the prewar average. Wartime losses and destruction were largely responsible for more than a 50-percent decrease from the prewar average in the U.S.S.R. to an average of about 2,400,000 acres during the years 1942 to 1944. The official 5-year plan for the early postwar period includes annual increases in acreage, with a crop of about 1,764 million pounds of fiber in 1950 the objective.

Poland

The only information at hand relating to controls or benefits in the Polish flax industry is concerning a decree of December 30, 1933, fixing premiums on exports of Polish flax. The decree, effective January 15, 1934, fixed premiums of 10 zlotys per 100 kilograms (0.86 cent per pound) on line fiber and 5 zlotys per 100 kilograms (0.43 cent per pound) on flax tow and combings. Exports of flax during the 5 years 1930-34 averaged about 8.2 million pounds annually, or barely more than 11 percent of the average for the preceding 5 years. Exports of flax increased to a total of nearly 15.0 million pounds in 1935, and about 20.8 million pounds in 1936, but thereafter declined to a marked extent.

Estonia

Estonia had no Government monopoly over the domestic flax industry for many years. One was established in 1920 but was abolished the same year after only a few months of operation. During prewar years, exports were under Government control through a system of licenses granted to merchants for exportation of fiber in amounts exceeding 5 kilograms (approximately 11 pounds), an export tax of Ekr. 3.00 per metric ton (about 89 cents per long ton), and an import license on seed which allowed imports only when the domestic supply was exhausted.

When the country was under German control, that Government urged increased production and required that a specified proportion of the crop (two-thirds in 1942) be turned over to the authorities and textile rationing cards were allowed only to farmers who voluntarily delivered their crop. An inducement to farmers to deliver more than the required amount was made by granting a reward of points in proportion to the quantity of fiber delivered beyond the minimum requirement. The points had money value and also entitled the holder to purchase textiles. The premium effective November 16, 1943, was 2 textile points for each Reichmark2/ in value of the fiber delivered.

2/ About 40 cents according to the average rate of exchange in 1941. No rates were quoted during the war years.

The Soviet organization for control was abolished at the beginning of 1943. Private trading firms were granted permission to buy flax, and factories were allowed to buy fiber and tow directly from producers at fixed prices.

Latvia

There was, before the war, a Government monopoly of the flax industry in Latvia which controlled the purchase, sale, importation, and exportation of flax. There was no general control over production.

The Latvian Department of Agriculture in September 1934 established a commission and made available to it a sum of 15,000 Lats ($4,800) for the distribution of 300 prizes to farmers with the best yields of flax during 1935. A law in December 1934 proposed by the Secretary of the Treasury provided that the Latvian Cabinet should fix purchase prices at which the Government would purchase flax from the growers. It also provided that profits of the monopoly should be added to the State revenue and losses should be written off from the working capital with consent of the Cabinet.

The Ostland Fiber Company, Limited, was established in Riga in 1942 as a subsidiary of the East Fiber Company, Limited, for the purpose of collecting, utilizing, and marketing of all textile raw materials, including flax. This was much in line with the work of the former flax monopoly. The German Government urged increased production of flax and offered to return to farmers 40 percent of the crop as cloth and yarn. Several modern retting plants were constructed from German and Dutch plans.

Lithuania

The Lithuanian Government had a monopoly over the domestic flax industry in prewar years. Little information is at hand regarding its operation except that only persons with permits were allowed to purchase flax for export and all flax for export was required to be assorted in accordance with regulations of the Secretary of the Treasury.

When efforts were made during the latter part of 1942 to obtain increased production, higher prices were announced as an inducement. When the German civil authorities during the occupation period gave help to Linas, the prewar flax cooperative, it resumed its former activities. A new experimental institute was established, and some new processing factories were constructed under Government promotion. Pulling machines were imported from Germany for distribution among farmers. Cultivation was encouraged by the granting of premiums of domestically produced textiles on delivery of larger quantities of flax. A sum of RM 1,500,000 3/ was set aside for improving processing plants. New plants were erected.

3/ Approximately $600,000 according to the average rate of exchange in 1941. No rates were quoted during the war years.

The collection system was reorganized for greater efficiency. The cooperative societies acted as purchasing agents for the crop. Processing was done at special centers instead of by the growers on individual farms.

A sum of 6 million Reichmarks, out of a total of 21 million Reichmarks assigned for the Baltic States, was allotted to Lithuania to be paid as premiums for increased production in 1943. During that year, cultivation was compulsory and delivery quotas were based on the areas ordered for cultivation rather than on the crop harvested. Prices for the better grades of fiber were raised appreciably. Certificates of point values were given upon delivery of fiber in excess of the quota and counted for purchase not only of textile goods but also of necessary farm ironware. The delivery requirement in 1942 was 100 kilograms per hectare that was ordered to be planted, or about 89 pounds per acre, but was raised in 1943 to 200 kilograms or 178 pounds per acre. The point value of the premium certificates was changed, also. In 1942, a point was allowed for each Reichmark's value of swingled flax that was delivered, 1/2 point for broken flax, and 1/2 for retted flax. Points allowed in 1943 remained at 1 for swingled flax, but changed to 3/4 and 1/4, respectively, for broken and retted flax.

Cultivation in 1944 was required of each farmer on the same number of hectares that he had cultivated during the preceding year, besides the imposition of special quotas. The system of premiums was continued. A flax-cultivation school was in operation by this time in addition to 18 agricultural schools of a general nature and several other schools for special commodities.

COUNTRIES OF CENTRAL AND SOUTHERN EUROPE AND THE MEDITERRANEAN AREA

The countries of central and southern Europe and Egypt grow flax in varying quantities, but the larger part of their production is consumed by domestic mills. In general, these countries followed the course common to most other flax-producing countries during the 15 years beginning with 1925. Acreages fell somewhat during the second 5 years, then rose considerably during the next period. (See table 7.)

The beginning of World War II caused a shortage of both fibers and fats for the Axis powers. Cotton from the United States and other Allied nations, silk from the Orient, jute from India, henequen from Mexico, sisal from Africa, and abacá from the Philippine Islands were either sharply restricted or cut off entirely by war conditions. Flax production was encouraged, because the crop could supply not only fiber but also much-needed oil and such byproducts as linseed cake and meal. Practically all plantings were of fiber varieties, but the seed was saved from the stalks before the retting process.

Table 7. - CENTRAL AND SOUTHERN EUROPE AND EGYPT: Flax acreages, 5-year averages, 1925-39

Countries	1925-29	1930-34	1935-39
	1,000 acres	1,000 acres	1,000 acres
Germany a/	49	18	b/ 105
Czechoslovakia a/.	53	22	b/ 40
Rumania a/	52	55	54
Hungary	7	31	28
Yugoslavia a/. . .	30	29	33
Bulgaria a/. . . .	1	1	8
Italy	18	10	15
Egypt a/	3	3	7
Total c/. . . .	213	169	290

a/ Includes area for both seed and fiber, but principally fiber varieties.
b/ Average of less than 5 years.
c/ Excludes area cultivated for seed only.

Compiled from official records.

Estimates from such data as are available indicate that the area planted to flax in Germany, Czechoslovakia, Rumania, Hungary, Yugoslavia, Bulgaria, and Italy increased from an average total of about 283,000 acres annually during 1935-39 to about 529,000 acres during 1940-44. Across the Mediterranean Sea in Egypt, average acreages increased under British encouragement from 7,000 to 31,000 acres per year.

Germany

Only relatively small amounts of flax fiber were produced in Germany in the years preceding 1934, the year when the general plan of increased production for self-sufficiency was put into operation. Total annual flax acreage of both oil and fiber varieties from 1931 to 1934 was the lowest in many years. The 1933 area of about 13,000 acres was little more than 5 percent of the area 50 years earlier. Under Government encouragement, the area was increased from about 11,000 acres in 1932 to approximately 110,000 acres in 1938. Fiber production increased in the same period from about 7 million to more than 64 million pounds, or from about one-third of the domestic peacetime requirements to almost 75 percent of the year's requirements in 1939.

Dependence on neighboring countries for a major part of the flax consumed in Germany was a large factor in the decision of the Government to encourage domestic production. The Government endeavored to stimulate farmers to cooperate in the plan for greatly expanded cultivation by authorizing buyers of fiber flax to pay to producers a premium above the prevailing market price and by guaranteeing to reimburse them for the amount of the premiums. The system of subsidy payments and guaranteed prices became effective on January 31, 1934, and was continued through the war years. The authorized premiums were fixed for 1934 at 4.00 marks for 100 kilograms (0.74 cent per pound) for unthreshed straw, 3.95 marks per 100 kilograms (0.73 cent per pound) for straw without seed, and 4.90 marks per 100 kilograms (0.9 cent per pound) for retted flax fiber. The actual price thus guaranteed to growers at that time was 19.00 marks per 100 kilograms (3.4 cents per pound) for flax fiber delivered direct to the spinners. The prices for the 1942 crop were reported to be considerably above those of preceding years.

A control system, organized for all agricultural production, was centered around the agricultural schools, of which there was one in each district. The staffs of the schools were pledged to intense activity in an advisory capacity. Systematic tests were made. Production methods most suitable for individual districts were developed, and the farmers were urged to apply them as recommended. Efforts were made to improve the quality of the plants, modern retting establishments were constructed, and improved dressing machines were installed. Salaried economic advisers were appointed, and they were assisted locally by farm advisers who were usually efficient producers chosen to supervise a small group of their neighbors in the same village. A farm adviser was held mutually responsible with each person under his supervision for that farmer's individual achievements.

As the war progressed and the shortage of all textile fibers became more acute, systematic increases in flax cultivation were required, and compulsory deliveries of straw or fiber were demanded. Flax especially was promoted, because it supplied both fats and fiber. Although fiber varieties were grown most generally, the seed was utilized as far as possible. By the end of 1944 the Government demanded delivery of the entire harvest of fiber-flax stalks and 70 percent of the straw remaining after removal of the seed from plants grown for seed.

Czechoslovakia

Czechoslovakia, for some years prior to World War II, had under cultivation an average of approximately 33,000 acres. Slovakia was included in the general Axis plan to encourage flax production. During the war years, acreage in the Protectorate of Slovakia probably averaged about 8,000 acres, but preliminary data indicate that a total of approximately 32,000 acres per year may have been cultivated in the area formerly included in Czechoslovakia. The German press reported in various years from 1941 throughout the war that any decrease in flax acreage was forbidden. Cultivation was controlled by placing it on a contract basis. By 1944 farmers were not only forbidden to decrease their flax acreage but were urged to increase it at the expense of vegetables and vegetable-seed cultivation.

Rumania

Flax was cultivated in Rumania principally for its seed until about 1937. In that year attention was given to fiber cultivation, but facilities for handling straw were not increased until 4 years later. During the years of textile shortage, the Rumanian Government controlled the flax and hemp industry by placing it under the direction of the Official Hemp and Flax Corporation.

That organization provided seed, fertilizers, and agricultural machines. It supervised cultivation and processing of the crop and financed the cultivation. When seed could not be imported and was scarce on the market, the Government requisitioned all supplies, then distributed them to growers in localities where seed was needed to carry out the acreage plans. An attempt was made toward self-sufficiency in flax and hemp fiber, and greater increases were urged each year, but apparently enforcement of the production plan was not possible, and no system of incentive payments above the rising prices in a scarce market was planned.

Hungary

No record of control or subsidy is at hand for prewar years. Flax is grown in Hungary for both oilseed and fiber. Since 1920 acreage has fluctuated between a low of about 4,000 acres in the years 1923 and 1926 and a high of approximately 44,000 acres in 1931. Unofficial reports during the war indicate that the Government and the farmers entered into uniform planting contracts which were approved by the Committee on the Production of Industrial Plants and by the Ministry of Agriculture. Increased production was urged, and a fixed percentage of the arable land was required to be planted to oleaginous or fibrous industrial plants. Prices were established in keeping with the general level of fixed prices for other commodities. Awards to growers were granted by making available to them specified quantities of cloth of various kinds, bags, tarpaulin material, cordage, and twine in stated proportions to the total amount of 10 percent of the produce delivered.

Small farms with less than a stated number of acres were exempt from the required cultivation. Permission also was granted by the Minister of Public Supplies for a farmer to grow a specified acreage above the required area for crops for the Government and keep the crop from the excess area for the use of his family. The remainder of the crop had to be delivered to the Hungarian Center for Fiber Plants.

Propaganda for increased acreages was widely spread. The Government distributed first-quality seeds, granted textile premiums, and permitted growers to retail a relatively high percentage of their output. Speedy delivery of the crops to the Center was insisted upon, however.

The Provisional National Government of Hungary decreed in August 1945 that industrial crops were subject to regulation in order to ensure production during 1945-46. Propaganda and aid to the farmers were planned, and production of flax was made compulsory on all farms of more than 20 cadastral yokes (28.44 acres), as well as on farms where it was formerly planted.

Yugoslavia

No program of encouragement or control was reported prior to World War II, and no official information is available for the war period, but concern for fiber supplies became greater with each year of war, and the whole production of textile fibers was brought under government control.

In Serbia farmers were held responsible for growing sufficient flax and hemp for their own textile needs. The total Serbian acreage was expected to be about 12,400 acres in 1942. Later, it became necessary for the Government to distribute a large part of the seed in order to assure supplies where and when needed. Increased acreages were planned each year, and cultivation was made obligatory.

In Croatia, which before the war accounted for about 70 to 80 percent of the total Yugoslavian flax acreage, the Government Office of Price Administration set buying prices for the 1941 and 1942 crops for flax to be used in the manufacture of rope (table 8).

Table 8. - CROATIA: Fixed buying prices[a] of flax for use in the manufacture of rope, crops of 1941 and 1942, at place of production

Grade of flax	Purchasing price	Premium	Total price	
	Kunas per kilogram	Kunas per kilogram	Kunas per kilogram	Dollars per pound
Containing 52 percent or more long, combed fiber, with loss in combing not to exceed 5 percent	54.	60.	114.	1.16
Containing 42 to 52 percent long, combed fibers	46.75	57.25	104.	1.06
Flax tow, with maximum of 30 percent loss in processing	27.	41.75	68.75	.70

a/ These purchase prices were exempt from sales tax. For each 1 percent waste over the maximum named, the price was reduced by 3 kunas per kilogram (approximately 3 cents per pound).

Premiums were offered in 1944 for delivery of the Croatian flax crop before September 30. A specified quantity of textiles at the official selling price, and also sugar, was granted for each 100 kilograms (220.5 pounds) of flax stalks delivered on time. A decree of the Croatian Minister of Agriculture late in 1944 required that all farmers with more than 5 cadastral acres (the equivalent of about 7 acres in the United States) of arable land should not plant more than 25 percent of the arable acreage with industrial plants for oil or fiber. The total number of cadastral acres to be planted in Croatia in 1945 was announced also at that time.

After the war, flax prices were fixed by the Federal Government of Yugoslavia by a regulation dated October 12, 1945, but no considerable change in acreage has been reported.

Bulgaria

Flax acreage in Bulgaria has been relatively small for many years, and during immediate prewar years it was still little more than enough to supply the domestic market. With the beginning of World War II, cultivation was encouraged, but little was done except to fix prices at which the crop could be purchased by the monopoly. Flax fiber, as well as seed, was included with the commodities purchased by the Bulgarian Grain Administration, and the prices were fixed by the Council of Ministers. The fiber-flax prices to be paid to producers by the Administration were set by the decrees of August 24, 1940, and August 11, 1941. (See table 9.)

Table 9. - BULGARIA: Flax prices fixed for 1940-41 and 1941-42

Quality	Leva per kilogram		Equivalent cents per pound a/	
	1940-41	1941-42	1940-41	1941-42
Flax fiber:				
1st quality	55	67	30.2	36.8
2nd quality	50	61	27.5	33.5
3rd quality	45	53	24.7	29.1
4th quality	-	44	-	24.2
Flax waste:				
1st quality	18	22	9.9	12.1
2nd quality	18	12	9.9	6.6
Flax stalks, without seed b/:				
1st quality	4.50	5.20	2.5	2.9
2nd quality	3.60	4.50	2.0	2.5

a/ Calculated at the average official rate of exchange in 1939, the last year for which quotations are available.

b/ During both years flax stalks with seed on were purchased at 0.20 lev less for all qualities, allowing 5 stalks per unit of quantity. All stalks were priced as delivered at the manufacturing enterprises of the Administration.

The price at which the Administration was authorized to sell flax, according to a decision of the Council in September 1941, was set at 27 leva per kilogram (14.8 cents per pound) for either fiber or oil varieties.

Bulgarian seed was insufficient for the 1943 season, and 15 tons (of 2,204.6 pounds each) of flax seed were reported supplied by Germany for distribution to growers needing it. The crop harvested was requisitioned by the Government, which was given control of the flax yields. Partial information concerning the 1944 crop indicates that prices and weather were both unfavorable and that production did not meet Axis expectations. Again the crop was requisitioned. Each farmer was allowed to hold only 2 kilograms (4.4 pounds) per person. The Bulgarian Ministry of Agriculture recommended that winter flax be planted in order to get two crops a year from the soil.

Italy

Flax production and trade have received no specific benefits over other crops in Italy, but indirect encouragement resulted from the general system of Government control over agriculture and the plan of foreign-trade control and tariffs which was aimed at Italian self-sufficiency. Direct aid also was derived from the Government Corporations which were set up to control various branches of economic activity. The Corporation for textile control determined flax acreage and cultivation through a system of contracts with the farmers, specifying each year not only the acreage to be planted but the price to be paid by the Corporation for straw delivered at the processing plants. The Corporation had complete responsibility for treating the straw, and it used modern methods of fermentation in tank retting.

The Italian Government for many years has sponsered flax research and experimentation with varieties of plants, methods of processing the straw, and many other projects for turning out an improved and more uniform quality of fiber. There was no change in policy during the war period, and no new plan has been reported since the close of the war.

Egypt

Flax has been cultivated in Egypt since very early times, but acreage has been rather unimportant since the development of cotton a century or more ago. Cultivation was increased during World War I, decreased during the years of peace, and then increased again when fiber shortages developed during World War II. The Egyptian Ministry of Agriculture urged the adoption of improved standards of processing and grading the crop. The British Government negotiated the purchase of nearly the entire 1940-41 crop at a price to growers which compared favorably with the price of wheat and barley.

The British Flax Control was organized in Alexandria in 1942 for the purpose of handling all flax purchases by the British Government. By an agreement between the two Governments, the British contracted to buy the bulk of the flax output, and the Egyptians undertook to increase the production of continental varieties. Purchase contracts were made in advance and prices were guaranteed at a base price. Actually, however, prices varied considerably from the base. The Egyptian market price was determined, to a large extent, by that paid by the Control. Purchases continued to be made at favorable prices each year until about the end of 1944, when wheat prices were raised without a comparable change for flax.

Production declined from 30,000 to 7,000 acres during the first year that flax prices compared unfavorably with those for wheat. Acreage is now about equal to normal prewar plantings. Soon after the middle of 1945, the British Flax Control announced that it would terminate control over exports to Great Britain on December 31, or earlier if warehouse arrivals were insufficient to meet expenses.

COUNTRIES OF LATIN AMERICA

Flax-fiber production in the Latin American countries was negligible before World War II. Small quantities were produced but mostly either on an experimental basis, or for local consumption in communities where grown. When an increased interest in fiber production developed with the outbreak of war, Ecuador, Uruguay, and other countries intensified their programs of experimentation. Acreages were increased in Argentina, Brazil, Chile, and Peru to the extent that by 1944 each of them was producing close to 3 million pounds of fiber per year.

Available data indicate that in Argentina the peak production year was 1942 when the output reached 3.6 million pounds. A preliminary estimate for 1945 indicates less than 2.0 million pounds produced in that year. In Chile, the largest output was 3.6 million pounds in 1945, grown on 14,600 acres. Peru reported 7.9 million pounds of fiber from 39,150 acres in 1942 but only 2.9 million pounds from 13,800 acres in 1944. The fiber production of Brazil is centered in Paraná, although approximately 1.5 million pounds of processed fiber were produced in Rio Grande do Sul in 1942.

Peru

Encouraging experiments in flax cultivation were made in Peru as early as 1933 by the Agricultural Experiment Station at La Molina, but production on a commercial scale was not attempted until 6 years later. A commission was appointed in 1939 to promote the industry with Government funds. Through its efforts the Government imported seed for planting, established a system of cash subsidies to growers to enable them to plant and harvest their crops, and imported machinery from other countries. Retting and scutching plants were erected and leased at a low rate for handling the flax. Experienced members of the Experiment Station supervised the plantings. Every effort was made by the Commission to assure a satisfactory crop. Diversification of agriculture and a decrease in cotton acreage were used to encourage expansion of flax cultivation. Increasing prices in the early war years also acted as an incentive for farmers to plant flax.

A Government Resolution in March 1941 required all growers who had received Government-furnished seed for experiments in previous years to return an equal amount from the first harvest of 1941 at the same price as was paid for the seed received. In order to secure enough additional seed for expansion, the authorities also exerted every effort to obtain foreign seed.

The entire crop of the 1941-42 season was sold to the United States under the first of a series of contracts begun in 1941 and terminated after the war, which were in accordance with an agreement between the Peruvian Government and the United States Commodity Credit Corporation. Prices were designed to give satisfactory returns to the growers. Controls were made effective as they became necessary. Planting dates were restricted to the prescribed seasons which had proved most satisfactory in the different regions, and late in 1942 cultivation in the sierra region was prohibited on certain types of land. Fiber for export was required to be properly classified by officially recognized experts. Seed importation was restricted to the Government as the only importing agent. Better growing methods were constantly sought.

The Commodity Credit Corporation contracted in May 1942 to purchase fiber up to 4,500 long tons during each crop year (beginning September 15), with an option of buying additional available amounts of all crops planted before an armistice was signed between the Allies and the Axis powers. Termination was finally effected so as to include no flax or tow planted later than September 1, 1945. In December 1942, an agreement to purchase tow up to 3,000 long tons per crop year became effective. Prices were guaranteed for both fiber and tow, based on 50 cents per pound for class-C fiber. All fiber was required to be of good quality. The minimum length was fixed at 22 inches, but the Peruvian Government agreed to do all possible to ensure a minimum of 36 inches. Fiber prices were guaranteed by the United States under this and later contracts for the various crops, f.o.b. Peruvian port. (See table 10.)

Table 10. - PERU: Flax-fiber prices guaranteed by the United States under agreement with the Peruvian Government, f.o.b. Peruvian port, 1942 to end of contract

Grade	1942 crop	1943 crop	Later crops
	Cents per pound	Cents per pound	Cents per pound
A	55	54	53
B	53	52	51
C	50	49	48
D	47	46	45
E	44	43	42
F	40	39	38

Early in 1943, a price of 15 cents per pound was set for purchases up to 4,500 long tons of both old- and new-crop tow of a quality equal to that known as Beltran B graded, and under the agreement of February 18, 1943, new tow prices were set as follows:

Tow grades	Cents per pound
Pluckings and No. 1	18
No. 2	13
No. 3 (equivalent to Canada T.T.)	10

Lower grades were eliminated from the contract and allowed, along with excess quantities of better tow, to be sold on the open market. By a later contract, prices were set as follows:

Tow grades	Cents per pound
Fine, combed, plucking tow	16
Clean, equal to Canada T.T. defibered	10
Defibered, not up to Canada T.T. (scutching tow)	8

The Peruvian Government department dealing with agriculture was removed in 1943 from the ministry where it had been, and a new Ministry of Agriculture was created. The Committee for the Control of the Flax Industry was established by decree in May of the following year; and 5 months later its functions were prescribed, and its duties were made more specific by the Ministry of Agriculture. The committee's influence extended through not only technical and agricultural but also commercial and industrial phases of the flax industry. Among others, it had the powers and duties to develop and control the industry; determine the best conditions for cultivation and processing; define and adopt classification and grading methods and standards; control, regulate, and facilitate trade; and supply information in all phases of the industry.

In order to encourage small producers, arrangements were made by which sellers could receive part payment of approximately 80 percent upon delivery of their fiber to the warehouse, without waiting until shipping, interest, and other charges were paid. Responsibility for the quality of the product was placed more and more upon processors rather than consumers. Experts from the United States were brought to Peru to help in the establishment of satisfactory methods of handling the crop and in the adoption of suitable standards for grading the processed fiber. A Supreme Resolution of the Ministry of Agriculture in April 1944 required processing plants to assume full responsibility for the quality of their output and required official graders to pass efficiency examinations each year in order to renew their licenses which were granted for only one year at a time.

Brazil

Flax has been cultivated in Brazil for many years but principally for seed. During the years of World War II, when flax prices were favorable, the State of Paraná, especially, produced fiber. Much of the crop is consumed domestically, but a small quantity is exported. The Government has taken definite steps in São Paulo to improve and standardize the handling and classification of flax straw and fiber. There has been no monopoly or program of special benefits to the industry, although both the Federal and State Governments have made some attempt to control the spread of plant fungus in Rio Grande do Sul.

Chile

Flax has been grown in Chile on a very small scale for some years, but production was increased when the recent war broke out in Europe. No general plan of monetary benefits was adopted, but Government authorities were active in trying to obtain experienced persons to help and advise in the production and processing of the fiber. A flax mill was erected in 1941 with both Government and private capital. A second plant was placed in operation at the end of 1943. Acreage increased from less than 2,000 acres planted for the 1939 harvest to more than 14,600 acres harvested in 1945.